

30 YEARS OF ENVIRONMENTAL PROGRESS



resources • Westway highway project proposed for Manhattan's west side **1978** • Love Canal declared "grave and
accident inflames nuclear power safety debate • EPA bans two herbicides containing dioxin **1980** • Superfund

CLEAN LAND

“We do not inherit this land from our ancestors, we borrow it from our children”
- Haida Native American saying.

By 1970, our children's land was a mess. Toxic waste was being stored, poured or dumped wherever. Mountains of garbage were rising near our cities. Contaminated soil was being given away as fill. And almost no one seemed to care. Until Love Canal.

William Love began building his canal in Niagara Falls, New York in the late 1800s with the idea of generating hydro-electric power. His scheme failed, but not before he had dug a trench nearly two-thirds of a mile long. For years, it was a local swimming hole, but in 1942, the Hooker Chemical Company began dumping chemical waste in it. Over roughly a decade, a staggering 22,000 tons of toxic waste filled Love Canal. In 1953, Hooker closed the canal and sold the site - for one dollar - to the Niagara Falls Board of Education for construction of the 99th Street Elementary School.

In the early 1970s, western New York State got unusual amounts of rain and snow, and water tables began rising. For most people, it just meant their basement sump pumps were busier than usual, but families living near the Love Canal discovered a toxic soup seeping into their cellars.

Photo Credit: AP/World Wide Photos



1978: State of emergency at Love Canal

The New York State Department of Health tested Love Canal and identified more than 80 chemicals - acids, pesticides, heavy metals and dioxins - including known neurotoxins and carcinogens. In August 1978, President Jimmy Carter declared a state of emergency. Hundreds of people - their fear and angst filling the national evening news - were evacuated. Eventually, the school and more than 300 homes would be abandoned and demolished.

Love Canal was no anomaly. Within months, EPA announced that 170 other sites were being investigated. Some, like Valley of the Drums in Kentucky, contained thousands of barrels oozing deadly toxics onto - and into - the land. EPA and local authorities, with emergency orders and patchwork funding, struggled to protect people and control the contamination.

It was clear that better tools - legal and financial - were needed to cope with the legacy of the industrial age. In 1980, Congress passed the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the law quickly became known for the “Superfund” cleanup trust fund it created. Thousands of sites were

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Cleanup Work Underway or Complete at Most of Region's 236 Superfund Sites

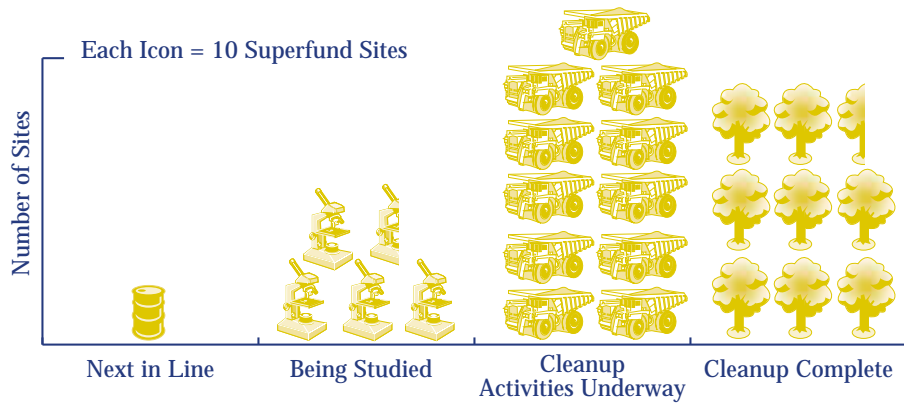


Chart Credit: C. Sebastian/EPA

identified and evaluated. The most pressing went on the NPL - the National Priorities List. The Superfund, established by taxing the chemical and petroleum industries, was there to finance cleanups when the responsible parties were unknown, unable or unwilling to pay or out of business. By the end of 1999, more than 1,400 sites across the nation had been placed on the NPL, with work complete or underway at most.

Almost 20 percent of all NPL sites - including some of the most difficult and expensive to clean up - are here in Region 2. New Jersey, with 113, leads the nation. Sites range from the gigantic Roebling Steel complex in Florence Township, which in its heyday produced cables for the Brooklyn Bridge, to the towns of Glen Ridge, Montclair and West Orange, NJ, where waste from nearby radium processing facilities was used as

fill. Some was even used to mix cement for sidewalks and foundations. A phased cleanup, underway for a decade, is nearly complete. In all, 769 residential properties were affected, and it's estimated that more than 10,000 truckloads of contaminated material will have been removed.

The most dangerous toxic waste removal in the history of Superfund took place just upwind of the heart of New York City. A warehouse hard by the side of the elevated Brooklyn-Queens Expressway was found to contain a stockpile of radium-tipped needles, once used in cancer treatment. It was, at the time, the largest known cache of radium in the world and EPA labored under the threat of a "doomsday scenario." Radium 226 has a half-life of 1,622 years. Had a highway accident - and at least one car had already crashed into the

building - caused a fire or explosion, the radium cloud could have exposed millions of people to radioactive poisoning and contaminated large parts of New York City for generations.

The hazardous waste in old municipal landfills is a special problem. Built without liners or caps and filled without concern about contamination, many are toxic warehouses, loaded with every waste imaginable. At Vega Baja, on Puerto Rico's north-central coast, some 200 homes perch atop an old municipal landfill. EPA has addressed contamination around two homes and a church and is investigating possible health risks to other residents. Meanwhile, families are being permanently relocated at the former Juncos Landfill in central Puerto Rico, where toxics have been identified in the soil and groundwater.

People - their health and their concerns - are always EPA's



Photo Credit: A. Rodriguez

Vega Baja: Homes built on a landfill.



1970s: America's landscape was littered with drums of hazardous waste.

first priority. When mercury was discovered in a Hoboken, New Jersey warehouse that had been converted into apartments, specialists immediately mobilized to evacuate the families, despite the fact that when the hazard was discovered, the government was officially shut down during the 1995 Congressional budget dispute. EPA's comprehensive community involvement program, active here and at other Superfund sites, is designed to reduce fear and uncertainty about contamination and to involve people in the decisions affecting their health and their homes.

As more sites have moved through the advanced stages of cleanup, EPA has gained a clearer perspective on the nation's hazardous waste problems and the challenges associated with them. A great deal has been learned about the nature and extent of

contamination, the risks to human health and the environment, and the technologies necessary to reduce risk. Innovative technologies offer less invasive and more cost-effective alternatives to traditional approaches. For example, bioremediation uses plants to naturally extract contamination from the soil.

EPA recently acted to remove the "Superfund stigma" from properties once suspected of being contaminated. Across the nation, more than 32,000 sites have been removed from the Superfund inventory, relieving potential developers of both red tape and future liability. EPA's Superfund Redevelopment Initiative expedites the return of NPL sites to productive use. In Bound Brook, New Jersey, when the first portion of the American Cyanamid site was cleaned, it was redeveloped as a minor league baseball stadium. This provided an economic base for the surrounding community, even as work continued on the remainder of the site.

EPA has also taken the lead in removing barriers to the redevelopment of "brownfields," industrial properties left dormant because of possible contamination. Thirty-four \$200,000 grants are helping communities throughout the Region assess the potential for recycling these sites.

Buffalo, New York, offers an early success story. A former steel plant in a prime industrial location sat vacant for over a decade because potential developers feared soil contamination. EPA helped clean up oil-soaked dirt on the site. One year later, Village Farms of Buffalo began construction of a \$15 million state-of-the-art hydroponic tomato farm. The indoor garden, housed in shimmering greenhouses, now employs 175 people and produces more than 130,000 pounds of ripe, red tomatoes a day.

In the last six years, the total number of NPL sites that have met all cleanup goals for at least one area of contamination has more than tripled, and cleanup is complete at 84



Under Superfund, EPA workers handle leaks and spills of hazardous materials.

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Mountains of trash outside towns and cities used to be common sights.

regional sites including Love Canal. There, the surrounding area has been cleaned and is being redeveloped - some 200 homes have been restored and sold. The canal itself, capped, properly contained and constantly monitored, sits behind a 12-foot chain link fence - a 70-acre memorial to our past environmental ignorance.

While Superfund is perhaps best known for its long-term cleanup work, an important part of the program deals with immediate health threats. Removal experts are the first on the scene when a spill occurs or leaking drums are discovered or residents urgently need an alternate source of drinking water. To date, the Region has conducted or overseen 674 such removal actions.

Superfund has taught us an

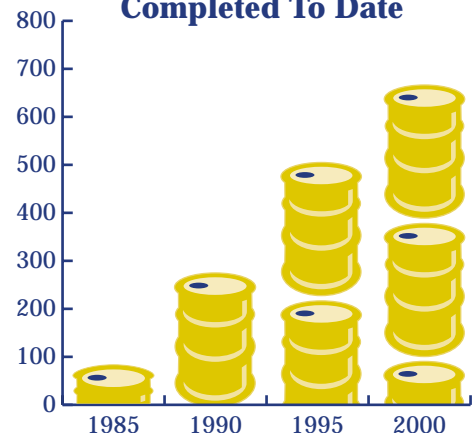
important lesson; like the evils in Pandora's box, toxic materials - if they cannot be eliminated - must be carefully managed. The Resource Conservation and Recovery Act (RCRA), passed in 1976, regulates hazardous materials "from cradle to grave." RCRA tracks the transportation, storage, treatment and final disposition of the hazardous wastes created by more than 200,000 companies. EPA established standards for the treatment of hazardous wastes and for the landfills designed to contain them. A major benefit: as companies began to bear the real cost of properly handling hazardous waste, they began to look for ways to reduce its volume.

Enforcing RCRA regulations can have unexpected benefits for the company involved! Part of the settlement of a RCRA

enforcement action at DuPont's Chamber Works plant in Deepwater, New Jersey called for the giant chemical company to conduct a pollution prevention audit. The audit studied 15 major manufacturing processes for possible ways to reduce waste. DuPont liked what it learned. With a one-time \$6 million capital expense to revamp its processes, the company was able to save \$15 million annually. EPA liked the results too; by the time the first seven changes were implemented, wastes were cut an astounding 73%. Best of all, the study was made available to other chemical manufacturers so they too could reduce levels of hazardous waste.

What about the rest of us? Waste reduction starts at home, but we seem to be heading in the wrong direction. Across America, we generated 200 million tons of trash last year. That's 4.3 pounds per person per day - and that's up 60%

Emergency Cleanups Completed To Date



since 1960. It all has to go someplace and finding that place is getting more difficult - and more expensive - every day. Who can forget the Mobro 4000, the garbage barge that spent the summer of 1987 churning up and down the Atlantic, rejected by six states and three countries, trying to find someone to accept its 3,100 tons of fetid waste?

For generations, trash went in the community dump. New York City sends its trash - up to 14,000 tons a day - to the Fresh Kills Landfill on Staten Island. There the city has built a trash mountain that is visible to astronauts in space orbit. More than 5% of the total U.S. methane emissions emanate from the bowels of Fresh Kills. The city plans to close Fresh Kills by December 2001. Regionally, most old landfills and town dumps are already shut. Federal standards now call for engineered landfills with caps to keep rain water from creating leachate and liners to segregate solid waste - and its contaminants - from the environment. At the same time, many communities have hazardous waste collection days or collection centers to separate paint, batteries, pesticides, pool chemicals and other household toxics from municipal trash.

Indeed, sorting trash has become part of the national culture. Newspapers in one bin, bottles and cans in another. Recycling and composting is returning to productive use

more than 25% of the household trash America generates, and the percentage grows every year. One of the obstacles to successful recycling has been the lack of markets for the recycled material. Recognizing that federal purchasing decisions have large environmental consequences, President Clinton signed an Executive Order in 1993 encouraging the purchase of environmentally preferable products. EPA's program covers everything from cleaning supplies to the 100 percent recycled paper on which this report is printed.

approximately 25% recycled fiber. New York City alone recycles over 600,000 tons of paper products every year. And that rounds out to nearly a million and a half mature pulpwood trees!

One aspect of the "Reduce-Reuse-Recycle" loop has not hit home; anyone who has bought a computer program - a CD encased in a jewel box, sealed with an adhesive strip, shrink-wrapped in plastic and stuffed in a box filled with cardboard to make the package larger - knows that we have yet to get serious about waste reduction.



Recycling cuts trash and conserves resources.

Paper is one of the great recycling success stories. The paper recovered for recycling in the past 10 years would fill more than 3.5 square miles of landfill space with a stack 50 feet high. Almost two-thirds of all newspapers are recycled, and the newspaper you read this morning contained

Industry, whose disposal costs are tied to the amount of waste generated, early-on learned the value of reducing waste. As the cost - and difficulty - of municipal waste disposal continues to increase, waste reduction is a lesson that must also be learned at home.